DOCUMENT RESUME

ED 145 750 HE 009 329

AUTHOR	Corwin, Thomas M.; Knepper, Paula R.
TITLE	An Analysis of S.311. The College Tuition Tax Relief Act. Policy Analysis Service Reports Volume 3, Number 2.
INSTITUTION	American Council on Education, Washington, D.C. Policy Analysis Service.
PUB DATE	Oct 77
NOTE	73p.
AVAILABLE FROM	Policy Analysis Service, American Council on Education, One Dupont Circle, Washington, D.C. 20036
EDRS PRICE	MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS	Educational Economics; Educational Finance; Federal Government; *Federal Legislation; *Finance Reform; Government Role; Higher Education; *Post Secondary Education; Student Costs; *Taxes; *Tuition
IDENTIFIERS	*College Tuition Tax Relief Act; *Tax Credits

ABSTRACT

Tax credit bills of various sorts were passed by the U.S. Senate in 1967, 1969, 1971, and 1976, with recent votes favoring the idea by about a two-to-one margin. Longstanding opposition in the Ways and Means Committee has heretofore prevented a postsecondary education expense tax allowance bill from reaching the floor of the House of Representatives. In the spring of 1977, however, hearings on tax allowance bills were held by a House budget committee task force, which indicated to some that the legislative climate for passage of a credit or deduction had improved. At the same time, important questions remain to be answered: How much would a tax allowance cost the Treasury in forgone revenues? Who would benefit? What would be the effect of such a measure on different types of collegiate and noncollegiate institutions. In this analysis the justifications for the allowance are reviewed, the major provisions of the currently considered bill are set out, and a model for analyzing the bill is prescribed. Presented are the findings when available data are run through the model, and the implications of the law are discussed for both static and changing enrollment patterns. (MSE)

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Policy Analysis Service Reports
Vol. 3, No. 2
October 1977

AMERICAN COUNCIL ON EDUCATION • WASHINGTON, D.C. 20036

AN ANALYSIS OF S.311

THE COLLEGE TUITION TAX RELIEF ACT

Thomas M. Corwin

Paula R. Knepper

Policy Analysis Service Reports
Vol. 3, No. 2, October 1977

American Council on Education
Washington, D.C. 20036

AMERICAN COUNCIL ON EDUCATION

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FOREWORD

The major function of the Policy Analysis Service is to study policy issues and to analyze the costs and benefits of public policy alternatives in a manner useful to policy-makers and the ACE constituency. Consistent with this objective, the present report is an examination of S.311, a bill of major significance to higher education institutions and students. S.311, the College Tuition Tax Relief Act, would provide a tax credit for tuition and required fees to the families of postsecondary students. This paper discusses the impact that enactment of this legislation would have on families at different levels of income, on different types of postsecondary institutions, and on the total federal effort to aid postsecondary education.

The authors would like to thank Laura Kent and Ida E. Green for their major assistance as, respectively, editor and typist. Staff members of the Policy Analysis Service, Office of Governmental Relations, and other ACE offices reviewed and commented on an earlier draft of this paper. Other persons who read the report in draft and provided helpful comments were William A. Sanda of the Congressional Research Service, Kurt Kendis of the University of Pennsylvania, and Thomas A. Butts of the University of Michigan. While the authors are grateful for the advice received from these parties, we accept full responsibility for all statements contained herein. Finally, we would like to thank the Lilly Endowment, whose support of PAS activities made this report possible.

Thomas M. Corwin

Paula R. Knepper

1. INTRODUCTION

By the time the 95th Congress has completed its work, an income tax allowance for the personal costs of postsecondary education may become a part of the federal tax system. Over the years, the tax allowance idea has received increasing support from senators, representatives, and members of the general public. Recent actions on Capitol Hill indicate sentiment for quick passage of a tax credit or deduction. If a postsecondary education tax allowance is considered in the course of the tax reform hearings now scheduled for fall 1977, it could be enacted before researchers and policy-makers have had a chance to consider fully the implications of such a policy.

Over the last decade, rising college costs have led students and their families to complain with increasing force to elected officials. The result: numerous proposals for broad-based tuition relief, many of which involve tax (rather than direct) expenditures.[1/] In addition to credit and deduction proposals, suggestions have been advanced for:

> an extra exemption for students or their parents; a rule allowing students to capitalize education expenses and amortize them through annual deductions over the "useful life of that education;" deferral of income tax otherwise due during student years, no matter what the source of that income; an outright cash grant of up to $1,200, reduced by the amount of income tax paid by the

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[1] A current definition of tax expenditures is contained in the following passage. "The Congressional Budget Act of 1974 requires a listing of tax expenditures in the budget. Tax expenditures are defined by that Act as revenue losses attributable to provisions of the Federal government tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability.' Tax expenditures are one means by which the Federal government pursues public policy objectives and, in most cases, can be viewed as alternatives to budget outlays, credit assistance, or other instruments of public policy." Special Analyses, Budget of the United States Government, Fiscal Year 1978, p. 119.

> student or his family for the prior years; government loans to students to be repaid by means of a surtax on their incomes during later earning years; permitting tax deductible contributions over a period of precollege years to a trust fund and allowing interest to accumulate tax free; a federal income tax credit for payment of state taxes to finance higher education, and still more could be noted.[2]

Tax credit and deduction proposals, more often than alternative ideas, seem to be translated into legislation, perhaps because they are easiest to understand and to administer. Four months into the 95th Congress, over fifty tax relief bills of this nature had been introduced, most of them proposing tax credits rather than tax deductions, which tend to be more complicated and to favor high-income families at the expense of those with lower incomes.[3] Whatever the reason, the credit concept has been the most frequently debated and has come closest to actual enactment.

Tax credit bills were passed by the Senate in 1967, 1969, 1971, and twice in 1976, with recent votes favoring the idea by about a two-to-one margin. Longstanding opposition in the Ways and Means Committee has heretofore prevented a postsecondary education tax allowance bill from reaching the floor of the House of Representatives. In the spring of 1977, however, hearings on tax allowance bills were held by a House Budget

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[2] John K. McNulty, "Tax Policy and Tuition Credit Legislation: Federal Income Tax Allowances for Personal Costs of Higher Education," California Law Review, Vol. 61 (January 1973), pp. 10-12.

[3] A tax credit yields the same benefit to the high-income taxpayer as to the low-income taxpayer because it is subtracted from taxes owed rather than from income. (The nontaxpayer, however, receives no benefit.) A tax deduction, on the other hand, is income variant; it gives greater tax relief to people in higher income brackets. Further, it bestows no benefit on taxpayers who do not itemize their deductions.

Committee Task Force, an event which indicated to some observers that the legislative climate for passage of a credit or deduction had improved.

Despite indications that tax credit legislation will receive further consideration during the 95th Congress, important questions remain to be answered. Among them: How much would a tax allowance cost the Treasury in forgone revenues? Who would benefit? What would be the effect of such a measure on different types of collegiate and noncollegiate institutions? The purpose of this paper is to supply some of the answers.

Chapter 2 reviews the justifications that have been offered for enacting a tax allowance, in order to provide a perspective for evaluating specific credit and deduction proposals. Chapter 3 sets out the major provisions of S.311, the tax credit proposal generally considered most likely to be enacted. In Chapter 4, a model for analyzing S.311 is described.

The next two chapters present the findings arrived at when available data were run through the model. Chapter 5 is limited to discussion of the findings within a "static" context: that is, under the assumption that student enrollment and institutional pricing patterns would not change in response to the introduction of a tax credit. In Chapter 6 this assumption is relaxed, and some tentative predictions on the "dynamic" implications of a tax credit are offered. A final summary is presented in Chapter 7.

2. POLICY ISSUES CENTRAL TO CONSIDERATION OF THE TAX ALLOWANCE CONCEPT

Economic justifications for granting student aid through the tax system, as well as specific reasons for adopting (or not adopting) a tax credit, have been reviewed and criticized by several authors, including McNulty, Kirkwood and Mundel, Leslie, and Sanda.[1/]

While the present paper is not intended to add to this body of analysis, a summary of the major arguments advanced in support of a postsecondary education tax allowance may be useful. The most frequently mentioned are as follows:

1. to improve on the definition of income contained in the tax code;[2/]
2. to bring greater equity, both horizontal and vertical, into the federal income tax system;[3/]
3. to subsidize institutions of higher education, at least to the extent that the operations of these institutions benefit society as a whole. For example, private colleges are often

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[1] McNulty, "Tax Policy and Tuition Credit Legislation," pp. 1-80; John B. Kirkwood and David S. Mundel, "The Role of Tax Policy in Federal Support for Higher Education," Law and Contemporary Problems (Autumn 1975, pp. 117-155; Larry L. Leslie, "Higher Education Tax Allowances: An Analysis," Journal of Higher Education, Vol. 47, No. 5 (September/October 1976), pp. 497-522; William A. Sanda, "Tax Allowance Proposals for Financing Postsecondary Education," in A Context for Policy Research in Financing Postsecondary Education, ed. by George B. Weathersby and Deanna Nash, National Commission on the Financing of Postsecondary Education (June 1974), pp. 163-222.

[2] McNulty, pp. 16-36.

[3] Ibid., pp. 36-42. "Horizontal equity" requires equal taxation of equal income. "Vertical equity" requires a correct pattern of unequal taxation for people of unequal income.

identified as worthy beneficiaries of tax allowance legislation;[4/]

4. to permit a tax break for educational expenses as an investment in human capital, much as deductions are now allowed for investment in physical capital;[5/]
5. to provide a means for middle-income families--which unlike low-income families, are not aided by the Basic Grants program and, unlike higher-income families, often lack sufficient resources to pay for college without considerable sacrifice or heavy loan obligations--to meet the rising cost of higher education.

Some of these issues are of only minor importance to those parties most concerned with the possible enactment of a tuition tax credit: legislators, colleges and universities, students and their parents. On the other hand, federal support of higher education institutions (reason 3) and tax relief for the middle class (reason 5) are both highly charged and widely debated issues which will occupy a prominent place in continuing consideration of tax credit proposals. Therefore, these two areas of interest, as well as the matter of how much a higher education tax credit will cost the government, provide a focus for the analysis contained in this paper.

The three policy issues, then, that are most central to consideration of tax credit and deduction proposals are:

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[7]Leslie, pp. 499-500.

[8]Sanda, pp. 168-170.

1. Total cost: Federal funds for higher education are not unlimited. While some people believe that the zero-sum argument is fallacious,[6/] others maintain that, in light of the present Administration's commitment to balancing the budget (and the effect this commitment has had on Congressional determination of funding levels for existing programs), the enactment of new legislation requiring substantial new expenditures for postsecondary education will place current expenditure programs in jeopardy. Therefore, any analysis of a major new program of federal aid to postsecondary students requires an estimate of total cost to the Treasury.
2. Distributional impact on students and their families: The characteristics of potential beneficiaries are always of concern to legislators when they consider enacting student aid and other transfer payment programs. Data on the first year of the Basic Grants program show that most BEOG funds have gone to students from families in the lowest income

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[6] Newton O. Cattell, presentation before the American Council on Education, Committee on Taxation, March 3, 1977. The term "zero-sum" refers, in this case, to a situation in which resources for a certain activity (such as higher education) are set at a given level. Therefore, a gain in resources by one component of that activity must be offset by a loss of resources, of equal magnitude, by one or more other components, for a zero net change in the total resource level.

categories and to independent students.[7/] Therefore a tax allowance is proposed as a means of enhancing the access and choice of students from middle-income families. Yet serious questions persist: Does a tax credit or deduction represent too large a gift to middle- and upper-income families at the expense of the lower-income groups? Is a tax credit of a few hundred dollars enough to provide the kind of financial relief required by families in the most difficult situations (for instance, those families who have more than one child enrolled in high-cost institutions at the same time)? Before a tax credit is enacted, the distribution of benefits by income group must be considered.

3. Distributional impact on types of institutions: New proposals for federal or state aid to higher education are often evaluated in terms of the struggle between public and private colleges for students and funds. Representa-

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[7]The most recent BEOG breakdowns (1976-77 academic year) are:

Income Category	% of BEOG Funds
$ 0 - 5,999	30
$ 6,000 - 7,499	13
$ 7,500 - 11,999	20
$12,000 - 15,000	9
Over $15,000	3
Independent	25
	100

Source: Higher Education Panel, American Council on Education, Student Assistance Survey, 1977.

tives of these institutions are vigilant in scrutinizing new proposals to determine which types of institutions would be the relative winners and which the losers.

With tax credits, it is difficult to predict what the differential institutional impact would be. For one thing, the benefits flowing to institutions through a tax credit would be sensitive to enrollment shifts resulting from the introduction of that credit. If each prospective postsecondary student had an additional two, three, or five hundred dollars available for higher education, that person's decision as to whether to enroll in college and where to enroll might well be affected. Previous research gives only a rough idea of the magnitude of student responsiveness to changes in higher education prices. The value of such estimates in assessing the effect of a new mechanism like the tax credit is unknown.

A second difficulty in assessing institutional impact arises from the basic question of how much (if any) of the tax credit should be considered a real benefit to the institution. Is the entire benefit received by a student attending a particular institution what is important to that institution? Or should the institution concern itself only with that part of the credit that it can "capture" in the form of higher tuition or lower (institutionally generated) financial aid? Answering this requires making questionable assumptions about institutional goals and priorities. Nor is it very certain how much of the credit would be captured by the colleges. Thus, evaluating the tax credit idea from an institutional perspective is difficult. Nevertheless, this paper makes a preliminary attempt.

3. A DESCRIPTION OF SENATOR ROTH'S COLLEGE TUITION TAX RELIEF ACT

S. 311, the College Tuition Tax Relief Act, was introduced by Senator William V. Roth (R-Delaware) on January 18, 1977. With a few minor revisions, it is the same bill which twice passed the Senate in 1976 and is generally considered the bill most likely to be enacted by the entire Congress. For this reason, it is the bill whose benefits, costs, and other implications will be considered in the remainder of this paper.

The major provisions of S. 311 are:

1. A federal income tax credit would be available to cover educational expenses of up to:
   - $250 in 1977
   - $300 in 1978
   - $400 in 1979
   - $500 in 1980 and thereafter.

   The bill provides for 100 percent compensation for eligible expenses up to the yearly limit. Unlike some similar bills, S. 311 does not mandate smaller compensation for expenses above certain levels. Nor is there any provision for a high-income family to receive a smaller tax credit than a lower-income family.[1/]
2. "Eligible expenses" are defined as tuition and required fees as well as the cost of books, supplies, and other

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[1]H.R. 817, introduced January 4, 1977, by Congressman Lawrence Coughlin (R-Pennsylvania) contains provisions for scaling down benefits both for expenses above $200 and to families with incomes above $25,000. Otherwise, the bill is almost identical to S. 311.

equipment required for courses of instruction at eligible educational institutions. Lodging, meals, and other living expenses are not included.

3. "Eligible educational institutions" include institutions of higher education and postsecondary-level (proprietary as well as nonprofit) vocational schools.[2/]

4. Educational expenses would be computed net of scholarships, fellowships, and veterans' educational assistance.

5. A credit could be taken only for educational expenses leading toward a baccalaureate at a college or a certificate of completion of required course work at a vocational school.

6. Credits would be allowed for expenses sustained by full-time students.

An additional note: Although a few earlier tax credit bills contained provisions to compensate low-income students (who would not benefit from a tax credit measure because their families do not pay taxes), the Roth bill contains no such provision.

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[2]Unlike S. 311, some bills have included tax allowances for parents who have children enrolled in private elementary and secondary schools. With better than four million children now enrolled in these schools (some 10 percent of the total elementary and secondary population), such an inclusion would add considerably to the cost of a tax allowance bill.

4. A MODEL FOR ANALYZING THE ROTH BILL

The model used in this paper for analyzing S. 311 borrows heavily from that developed by William A. Sanda and described in "Tax Allowance Proposals for Financing Postsecondary Education" (1974), a report for the National Commission on the Financing of Postsecondary Education (NCFPE). Sanda estimated the costs of alternative tax credit proposals on the basis of projected higher education enrollments, tuition at different types of postsecondary institutions, and the maximum credit allowed under the various proposals (adjusted, when appropriate, for family income). The Sanda model was refined for the present study by including in the model the average tax payment of families in different income groups. Further refinements were undertaken to make tuition and fee payments (reported according to academic year) consistent with tax payments (reported according to calendar year).

To arrive at an estimate of the total federal tax expenditures required for a tuition tax credit, the new model uses a five-step procedure:

1. Estimating tuition and fees net of federal need-based grants. Analysis of the cost of the Roth bill begins with an estimation of the mean tuition and fees paid by students attending different types of institutions. The Roth plan would provide a credit only for tuition and fee payments net of student aid and veterans grants. In this study, financial aid is calculated as the package of Basic Educational Opportunity Grant (BEOG), Supplementary Educational Opportunity Grant (SEOG), and State Scholarship Incentive Grant (SSIG) awards

received by the average student attending a particular type of institution.[1] It is assumed that funding levels for these programs will be constant (at the 1976-77 level) over the next four years and that the pattern of allocation among institutional types will not change.[2] Thus, the tuition cost for the individual student is calculated as: $C_{jy} = P_{jy} - (B_j + S_j + G_j)$ where:

C_{jy} = the average tuition and required fees (net of financial aid) for a student attending an institution in category (j) during academic year (y);

P_{jy} = the average gross cost (or "sticker price") of tuition and required fees at institutions in category (j) during academic year (y);

B_j = the average BEOG award to a student attending an institution in category (j);

S_j = the average SEOG award to a student attending an institution in category (j);

G_j = the average amount of SSIG aid to a student attending an institution in category (j);

y = academic year of interest;

j = institutional categories a-g.[3]

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[1] Allocation figures for the BEOG, SEOG, AND SSIG programs were obtained from the U.S. Office of Education. Unfortunately, only mean figures for these programs are available, so no conclusions on the range of federal grant-in-aid packages received by students can be made. In addition, because tuition figures are expressed only in means, the model's ability to predict total federal expenditures required for a tax credit plan is somewhat limited.

[2] Unfortunately, available data on the allocation of federal student aid funds by both family income category and institutional type are inadequate for inclusion in the model.

[3] Institutional categories used in this paper are listed in Table 5.

This model does not take into account state grant-in-aid programs (except for the state-funded portion of SSIG), private and institutionally generated grants, or educational assistance made available under the G.I. bill, because institutional breakdowns (and in some cases, information on the total level of funding) for these programs are not available. Excluding these sources of financial aid leads to some overestimation of the total cost of the tax credit. On the other hand, the model also fails to take into account the cost of books, supplies, and other required (nontuition and fee) expenses included in the Roth proposal. This exclusion will result in at least some underestimation of the total cost. The net effect is probably a slight overestimation of total cost to the federal government.

2. Converting school-year costs to calendar-year costs.

While college costs are generally measured on the basis of (fall-to-spring) academic calendars, a tax credit would be claimed on the basis of costs incurred during a calendar year. Thus analysis of the Roth proposal requires that tuition and fee charges be evaluated by calendar year. This conversion is accomplished with the following formula:

$$Cjy^* = P_1 [.5Cjy + .5Cj(y+1)] + P_2 [.67Cjy + .33Cj(y+1)]$$

where:

Cjy^* = average tuition and fees (net of financial aid) for a student attending an institution in category (j) during calendar year (y^*);

P_1 = proportion of total institutions using a semester system;

P_2 = proportion of total institutions using a trimester, quarter, or similar system;[4]

y* = the calendar year which includes the last part of academic year (y) and the first part of academic year (y+1).

Through this formula, the allocation of institutions according to semester versus trimester or quarter system (which is available from NCES[5]) is used as a proxy for the actual allocation.

3. Computing the tax credit received by the individual student. Under the Roth proposal, the amount of tax credit that could be claimed by individual students (or their families) would be equal to the students' total tuition and fees over the calendar year or the students' (or their families') income tax payment for that year or the maximum allowable credit--whichever of the three is smallest. This computation is symbolized by the following formula:

$Rijy^* = \min \{cjy^*, Tri, R(max)y^*\}$ where:

$Rijy^*$ = average tax credit claimed by an individual (or family) in income category (i), attending an institution in category (j), during calendar year (y*);

---

[4]Because of data limitations, this calculation assumes nonattendance in summer school.

[5]National Center for Education Statistics, Education Directory, 1975-76, p. xxix, Table 5.

Ti = average yearly income tax paid by a family in income category (i);[6]

R(max)y* = maximum tax credit for postsecondary education expenses allowable per student for calendar year (y*);

i = income categories 1-7.[7]

4. Converting institutional enrollments from academic year to calendar year. To assess the full budgetary impact of a tax credit, some measure of the total number of enrolled students eligible to receive benefits in a given year must be available. This is adjusted (for each income and institutional group) from academic year projections with the following formula: $Eijy^* = \frac{2[Eijy]+[Eijy(y+1)]}{3}$

where:

Eijy* = total number of full-time undergraduate students in income category (i) enrolled in institutions in category (j) during calendar year (y*);

Eijy = total number of full-time students in income category (i) enrolled in institutions in category (j) during academic year (y).

Enrollment estimates for academic years 1967-77 through 1980-81 for the six categories of collegiate institutions were taken from Projections of Education Statistics to 1984-85 (NCES, 1976, Table 105). Enrollment projections (and distribution) for noncollegiate institutions were taken from the NCFPE Report.

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[6] These figures were derived from U.S. Internal Revenue Service, "1975 Preliminary Statistics of Income for Individual Income Tax Returns," Publication No. 198.

[7] Income categories used in this study are listed in Table 2.

5. Summing the total budgetary impact of the tax credit.

The remaining function of the model is to sum up the total cost to the U.S. Treasury of the tax credit measure. This final step is represented by the following equation: $R(tot)y^* = \sum_{i=1}^{7} \sum_{j=1}^{7} \lambda\ [Eijy^*) \cdot (Rijy^*)]$

where:

$R(tot)y^*$ = Total cost of the tax credit measure during calendar year (y^*);

λ = adjustment factor for eligible students who will actually take the tax credit

The adjustment factor (λ) estimates how many of those students (and their families) eligible for a tuition tax credit would in fact take it. In this study (as in the NCFPE report) a Treasury Department estimate of $\lambda = .9$ is used.

5. RESULTS: THE STATIC VIEW

An initial perspective on the costs and benefits of S. 311 is gained by assessing the bill under the assumption that neither student enrollment nor institutional prices will be affected by the enactment of a tax credit. Though somewhat limited in scope, this process allows the model (described in the last chapter) to be used for analyzing the policy questions set out in Chapter 2. In the next chapter, the dynamic implications of a tuition tax credit are discussed.

As outlined in Chapter 2, the three critical policy issues that can be addressed with the model are: (a) total cost to the federal government; (b) impact on students from families at different levels of income; and (c) impact on different types of postsecondary education institutions.

Budgetary Impact

The total cost to the Treasury of S. 311 was computed for the first four years of its proposed existence.[1/] According to these calculations, tax expenditures attributable to S. 311 would come to approximately:

- $1.282 billion in 1977
- $1.530 billion in 1978
- $1.971 billion in 1979
- $2.410 billion in 1980

Because of uncertainties connected with predicting enrollments, costs, and student aid levels for even a few years into the future, a variety of total cost estimates are possible. As a point of reference, Table 1

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[1] A complete listing of the data for all institutional and student groups in the four years is available on request from the Policy Analysis Service, American Council on Education.

compares the estimates made in this study with those offered elsewhere.

These cost estimates do not differ greatly. It is clear that the tax credit proposed by Senator Roth would initially cost about $1 billion a year and would grow, three years later, into a program costing well over $2 billion. Thus, S. 311 would loom large in the federal effort to assist postsecondary education, an effect which in fiscal 1977 provides an estimated $3.2 billion a year for programs administered by the U.S. Office of Education, $3.9 billion for veterans' education benefits, $4.4 billion for research and development grants, and $1.7 billion distributed through tax expenditures.[2/]

Distribution of Benefits Among Families of Different Income

Breaking down the expected tax expenditures by family income (Table 2) produced few surprises. A distribution by income for each of the four years is shown in Table 3. The highlights:

1. An absence of benefits for very low-income families. Because their families do not pay federal income tax, students from families making less than $3,000 a year (4.3 percent of the student population) would not receive any help from S. 311 in meeting college expenses. Many independent students would probably also fall into this low-income category.[3/]

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[2]Source: Congressional Budget Office, Postsecondary Education: The Current Federal Role and Alternative Approaches, February 1977, p. 3.

[3]For this reason, a tax credit might be considered a vehicle for limiting the recent tendency of students to claim independent status. An estimate of the number of independent and potentially independent students whose decisions would be influenced by the enactment of S. 311 is difficult to make.

2. For the rest of the population, a fairly even distribution of tax credit dollars, with slightly greater benefits going to higher-income families. The families which would benefit least (because of low tax liabilities) are those in the $3,000-$5,999 income group. In 1977 the average tax credit for members of that group would be about 73 percent of that received by families making more than $6,000, and by 1980 this figure would decline to slightly over 41 percent. During 1977, 1978, and 1979, families with incomes from $7,500 to $24,999 would receive fairly equal mean benefits. Only in 1980 would the lowest income group in that range fall behind the others. In that year the mean benefit per student for families in the $7,500-$9,999 category would be $338.71; for families in the higher income brackets, it would be closer to $370.

Students from families with incomes of over $25,000 a year would enjoy an advantage in all four years, primarily because of their greater tendency to enroll in high-cost institutions. Nevertheless, in no year would the mean benefit accruing to members of this income group exceed the average benefit accruing to the middle-income groups by more than $15. Thus, the Roth plan is regressive; but at least at the high end of the income spectrum, it may be less regressive than expected.

Table 4 gives another perspective on the probable distribution of benefits, with students being grouped into low-, medium-, and high-income categories.[4/]

[4]These groupings are not intended to answer the familiar question, "How do you define middle class?" Their limits were chosen simply to facilitate data analysis.

As this table indicates, the share of tax credit expenditures received by middle-income families, under the Roth bill, would exceed their share of total enrollment, federal income tax returns filed, and federal income tax dollars paid. The share of the tax credit pie going to upper-income families would also exceed their share of total enrollment and total tax returns filed but would be well below their share of income tax dollars paid. As for the lower-income group, per capita benefits from tax credits would be smaller. Therefore, its share of total tax credit expenditures would be below its share of total enrollment and of total tax returns filed though well above its share of total federal income tax paid.

Table 4 offers only a preliminary indication of the position a tax credit would occupy in the overall federal system for obtaining revenues. A more complete picture would require detailed incidence analysis of all federal taxes, something well beyond the scope of this paper. With that caveat in mind, two points can be made:

1. A tax credit costing the Treasury some $2.41 billion a year would amount to about 1.6 percent of current (calendar 1976) federal income tax receipts, 0.7 percent of all federal budget receipts, and 0.6 percent of current federal budget outlays.[5/] Thus, the budgetary impact of this measure, while significant, would not be as great as, for instance, a major reduction in U.S. defense spending or full federal takeover of state and local welfare costs or other often discussed policy alternatives.

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[5]ACE staff estimates.

2. Though only to a limited extent, the effect of a Roth tax credit would be to retard the progressiveness of the federal income tax.

Distribution of Benefits by Type of Institution

Retaining the assumption that institutional enrollments will not be affected by the introduction of a tax credit, a breakdown of tax credit expenditures by type of institution (see Table 5) is shown in Table 6. In Table 7, the distribution of benefits by private versus public colleges is shown. The notable points are as follows:

1. In each of the four years, approximately one-half of all tax credit dollars would go to students attending public collegiate institutions. Another one-quarter of these expenditures would go to students attending private collegiate institutions, with the remainder going to students enrolled in noncollegiate programs.
2. Though private college students would receive a relatively small share of total tax credit expenditures, the average credit received by a private college student would be somewhat larger than that received by his or her public college counterpart. In the first year (1977), the average grant to a private college student would be $48.74 (or about 30 percent) higher, and by 1980 it would be $129.36 (or about 41 percent) higher.
3. Students at public two-year colleges (some 13 percent of all full-time students) would gain little from a tax credit measure, chiefly because their tuition costs are very low.

In the initial year, the average community college student would receive a credit of $19.81, only slightly more than one-tenth of the average credit for all students. By 1980, as the result of a fairly large projected increase in community college tuition, the average credit to their students would be $83.55, or more than one-fourth of the average credit to all students.

4. The proportion of total tax credit expenditures going to noncollegiate students would be slightly smaller than the proportion of these students in the total post-secondary population. Tuition and fees for vocational programs tend to be high, though often they are paid for only a short period of time. Because vocational students tend to come from low-income families (and thus have tax liabilities too small to qualify for the maximum allowable credit), the average credit going to these students would be less than that for students at private collegiate (and most public collegiate) institutions.

6. DYNAMIC IMPLICATIONS OF A HIGHER EDUCATION TAX CREDIT

The assumption underlying the enrollment and cost estimates made in Chapter 5--that student and institutional behavior would not be affected by the adoption of a tax credit--is not broad enough to represent what would actually happen. If S. 311 were enacted, some supply-and-demand response to changed price conditions would occur. These "dynamic" implications are perhaps the most intriguing aspect of the tax credit idea, but they are also the most difficult on which to speak with any confidence. Only the most tentative speculations are possible.

Though some federal aid to education now works through the tax system, a tax credit would represent an abrupt departure from current student aid policy. Therefore, what we now know, or think we know, about the effect of student aid on enrollment has only limited applicability to analysis of a tax credit measure. The same can be said about previous research on how tuition influences enrollment. Nevertheless, previous analytical efforts provide at least a starting point for discussing the dynamic effects of a tax credit. This discussion will focus first on student behavior and then on institutional responses. Finally, a few additional dynamic implications will be considered.

Changes in Student Enrollment

As a form of government subsidy to families with members attending college or vocational school full time, a tax credit would provide an incentive for increased postsecondary education enrollment. At least four types of change in enrollment behavior can be expected:

1. an increase in total postsecondary enrollment.

   Researchers have found that student enrollment is sensitive to higher education prices, though the various studies con-

tain little agreement on the magnitude of this sensitivity. Jackson and Weathersby's review of recent demand studies arrives at a "ballpark" estimate of a 2.5 percent change in enrollment for every $100 change in higher education price.[1/] Assuming that a tax credit produces the same enrollment effect as a tuition reduction of equal amount (a questionable assumption, as is explained below), then each $100 of tax credit would result in an increase of 177,052 full-time students (over calendar year 1977 projections). A $250 maximum credit--in effect, an average $181.07 credit--would result in 320,085 additional enrollments. If the additional tax credit in subsequent years is assumed to take care of increased costs but not to generate further new enrollments, then this figure can be used as an initial estimate of additional enrollment produced by the introduction of a tax credit. A breakdown of these new students by type of institution (weighted by the average tax credit received by a student attending each type) is given in Table 8, which also shows the distribution of some $409 million in additional tuition and fee revenues (at 1977 prices) among types of institutions as a result of these new enrollments. Table 9 indicates the additional tax credit expenditures

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[1]Gregory A. Jackson and George B. Weathersby, "Individual Demand for Higher Education: A Review of Recent Empirical Studies," Journal of Higher Education, Vol. 46, No. 6 (November/December 1975), pp. 624-5.

incurred by the U. S. Treasury as a result of these new enrollments. For 1977, these expenditures would amount to more than $65 million, and by 1980 they would rise to over $115 million.

One should be cautious about regarding the figures in these tables as anything more than a rough indication of the impact of a tuition tax credit on enrollment trends. For one thing, the projected enrollment increases are probably too high. A general finding of previous demand studies--which usually have sought to determine the price responsiveness of all students or of all people of college-entry age--is that those in low-income categories are more price-responsive than others.[2/] But a tax incentive such as the proposed credit would in actuality be available only to middle- and upper-income students and thus would affect a more affluent group than was surveyed in the earlier studies, a group that is believed to be much less responsive to changes in price than is the population as a whole.

Another reason for doubting that enrollment increases would be as great as is projected was pointed out by Kirkwood and Mundel in their examination of the existing "student dependents exemption":

> Parents accrue the tax savings a year or more after the decision to matriculate is made, so the influ-

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[2]Jackson and Weathersby, p. 625.

> ence of the exemption on the decision is attenuated. Most important, the benefits flow in the form of an income supplement, not a price reduction. Meanwhile, what evidence there is suggests that a tuition reduction of $100 will produce a far greater increase in enrollments than a $100 addition to parental incomes.[3]

A better count of the number of students persuaded to attend college by the presence of a tax credit must await the actual introduction of that credit. Nevertheless, evidence suggests that students are less responsive (in their enrollment behavior) to tax incentives than to tuition and student aid incentives.

It is also uncertain how the increased enrollment would be distributed among types of institutions. The tables project enrollment increases according to the mean credit received by students attending each type of institution, a procedure which places public two-year colleges at a distinct disadvantage and is fairly neutral toward other institutional types. In reality, the distribution of new enrollments might be very different. The tax credit would effectively cancel out tuition for many public university and two-year college students. In addition, it would so reduce tuition at public four-year colleges that, by 1980, average tuition at these schools, net of federal grants and tax credit expenditures, would be only $21. In contrast, private colleges and noncollegiate tuitions would remain high, probably

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[3]Kirkwood and Mundel, p. 151.

still beyond the reach of many students. Thus the tax credit could confer an advantage to the public institutions that is not reflected in the projected figures. On the other hand, a tuition tax credit would not necessarily hurt the private institutions. It would in fact narrow, at least slightly, the much-discussed "tuition gap" between the private and the public sector and thus might induce at least some students to invest in a private college education.

2. a shift from part-time to full-time enrollment.

In recent years an increasing proportion of college students have been enrolled on a part-time basis. In 1976, part-timers accounted for almost 39 percent of total degree-credit enrollment, compared with 29 percent in 1965.[4/]

Of all members of the important 18-24 age group, the Congressional Budget Office found that 3.8 percent were part-time students in 1975, an 18 percent increase over the percentage in 1970. During the same period, the full-time participation rate remained essentially stable.[5/]

Many educational theorists believe that a combined program of academic instruction and work experience is the most appropriate course of action for a sizeable percentage of

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[4]American Council on Education, A Fact Book on Higher Education, 2nd Issue/1976, Table 76.100.

[5]Congressional Budget Office, Postsecondary Education: The Current Federal Role and Alternative Approaches, February 1977, p. 59.

today's youth. Moreover, many students have found that only by holding down a part-time job and going to school part-time can they afford higher education. The introduction of a tax credit available only to full-time students could alter the present distribution, with some part-time students shifting to full-time status.

Unfortunately, few data are available on why students choose to attend college full time or part time. Therefore, projecting the magnitude of this type of change in student demand is, at this point, exceedingly difficult.

3. a shift in enrollment from public two-year colleges to public four-year colleges and universities. Many of today's students enroll in public two-year colleges as the most accessible and least expensive higher educational alternative. In the 1977-78 academic year, an estimated 13.4 percent of all full-time students were attending community colleges. But because of the low net cost of tuition and fees at these institutions, community college students would receive relatively little dollar benefit from a tax credit. While that benefit would effectively reduce net community college tuition to zero, public university net tuition would also be cut to zero, and net costs at public four-year colleges would be dramatically reduced. Therefore, one would expect that some students, believing that they would get a better education at other institutions for essentially the same price, would choose not to attend the community colleges they would otherwise have attended.

The magnitude of this change cannot now be determined.[6/]

4. a shift in enrollment from public to private institutions.

As mentioned above, many young people who otherwise would not attend college might be encouraged by a tuition tax credit to enroll in public institutions; still others in this group (though probably a much smaller number) might be encouraged to enroll in private institutions.

As for those students who would go on to higher education with or without the incentive of a tax credit, those choosing a private institution would enjoy the benefit of a tax credit but would not have any reason to alter their college choices. Among those who would enroll in public institutions, many may be considered "marginal"; that is, they fall just short of being able to afford a private college education. With a tax credit, some of these marginal students would undoubtedly choose a private college. Thus some public-to-private movement could be expected if a tax credit were enacted.

Changes in Institutional Pricing Policy

Considerable speculation has focused recently on possible institutional responses to the introduction of a tax credit. Some observers believe it likely that colleges, universities, junior colleges, and vo-

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[6]One-half of all two-year public college students attend part time. Therefore, a small shift of full-time students from two-year to four-year institutions might be considered of relatively minor importance to the two-year colleges.

cational schools would find, in a tax credit, a means of obtaining new institutional revenues, revenues which could be "captured" through across-the-board increases in tuition or through decreases in institutionally generated financial aid. This view has, however, been disputed by other commentators who believe that (1) active price competition among postsecondary institutions could be counted on to hold back widespread tuition increases; and (2) prices are raised in response to new needs for revenue rather than new sources of revenue. As one prominent university president told a congressional committee:

> At Rutgers University, and at all institutions of public higher education, we are committed to a policy of low tuition. We believe that the best means of providing access is to maintain affordable tuition levels. Our governing boards and state legislatures would not opt for tuition increases simply because they believe students now have an increased ability to pay; tuitions are raised only when there is an absolute need for increased funds, and such decisions are made with the greatest reluctance.[7]

Without questioning that private as well as public colleges are generally reluctant to raise tuition, one can suggest that several institutional budget items might, in the near future, claim an "absolute need" for increased funding. One such item is faculty compensation. The average faculty member does not receive the automatic yearly cost-of-living increases common to workers in other sectors of the economy. Table 10, from the most recent Minter-Bowen report, indicates that faculty salary increases since 1972-73 have failed to keep pace either with increases in the cost of living or with increases in

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[7] Edward J. Bloustein (President, Rutgers University), Testimony submitted to the House Budget Committee, May 12, 1977, pp. 5-6.

average weekly earnings for private nonagricultural employment.

A second area in which need for increased funding is widely acknowledged is capital expenditures. Minter and Bowen state:

> Capital expenditures which had been relatively low in 1975-76 dropped again in in 1976-77. It is probable that depreciation and obsolescence are taking their toll and that unmet capital needs are accumulating. The institutions are probably experiencing hidden deficits in the capital account and a day of reckoning when capital expenditures must increase, will come some day.8/

The enactment of a tuition tax credit could hasten that day of reckoning for private and public institutions alike. There would be other claims on new institutional revenues as well. The point here is not to judge which of these claims takes precedence but to suggest that institutions do have major needs which are not met under current pricing policies.

Previous reports have questioned whether the tax credit is a vehicle through which colleges and universities would be likely to raise tuition. A Congressional Budget Office paper speculates:

> . . . as a general proposition it is clear that tuition charges are more likely to increase in response to a broad across-the-board subsidy like that contained in S. 311 than they are when a subsidy is targeted on a more narrowly defined group of students . . .
>
> . . . Since three out of every four students would receive a subsidy under S. 311, compared to only one out of four under the BOGs program, it is clear that S. 311 gives institutions a substantially greater opportunity to capture the subsidy through tuition increases.9/

Thus, it is likely that Congressional enactment of a tuition tax

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[8] W. John Minter and Howard R. Bowen, Private Higher Education: Third Annual Report (Washington: Association of American Colleges, 1977), p. 62.

[9] Congressional Budget Office, "Response to Questions from Senate Budget Committee Concerning S. 311, the College Tuition Tax Relief Act of 1977," March 17, 1977.

credit would be perceived by higher education institutions as a unique opportunity to raise prices without placing an additional burden on students. In deciding whether to raise tuition and thus "capture" some of the tax credit, however, a college would have to balance a number of benefits and costs resulting from such a move. Benefits would come in the form of additional revenues from increased tuition. On the cost side, a college would, by raising tuition, give up tuition and fee revenues from some of the new students who would have enrolled as a result of the tax credit. The number of these students who subsequently decide not to enroll would be a function of the amount of tax credit captured by the institution.

As a further cost, one must consider the effect that raising tuition would have on low-income students. The tax liabilities of these students would be too small to qualify them for the maximum allowable credit, and therefore many of them would not have the additional income to cover increased tuition. If recent analyses are correct, these students are much more sensitive to price factors than are higher-income students. If institutions do raise tuition, low-income students might be taken care of in three ways:

1. In some cases, they might receive additional tax credit dollars to cover higher tuition up to the level of their tax liabilities.
2. To cover some of their additional financial need, they might be given larger awards from BEOG and other federal and state programs aimed at low-income students.
3. To prevent them from dropping out of the higher education

market, they might be provided with additional grants from the increased tuition revenues of the institutions.

The following analysis is based on the most pessimistic assumption (from the institutional point of view) in measuring net institutional benefit from raising tuition. This assumption holds that the institutions would themselves provide low-income students with all the aid needed (beyond what could be recovered through the tax credit mechanism) to offset increased tuition.

Table 11 shows the revenues, by type of institution, that colleges would generate under a $100 price increase. For all except the public two-year colleges, this increase would be less than the amount of the average tax credit. As in the previous section, it is assumed that each $100 change in tuition would result in a 2.5 percent change in enrollment. Thus, as the table shows, institutions would receive an additional $100 from each remaining "marginal student" (a student induced to enroll by the presence of a tax credit) and from each "original student" (a student who would still enroll in the absence of a tax credit).[10/] The base number of marginal students is taken from the previous section on "Projected New Enrollment " (see Table 8).

Table 12 indicates the revenues that each type of institution would forgo as a result of a $100 tuition increase. Lost revenue per student is taken as 1977 tuition-and-fees "sticker price." Table 13 shows the

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[10]Type C (two-year public) institutions are again the exception. A tuition increase of $100 would be $80.19 more than the average tax credit received by students attending these institutions. Thus a $100 tuition increase would drive out not only all marginal students but also some original students as well.

compensation which would have to be paid to low-income students who cannot receive the full tax credit. Students in the $0 - $2,999 income group do not have any tax liability and thus cannot qualify for tax credits. Each of these students would have to receive an additional grant of $100 to make up for the tuition increase. Students in the $3,000 - $5,999 income group, however, would receive an average $180 tax credit. Thus, these students could pay $100 additional tuition and still be in a better position than they were before the credit was enacted.[11/]

Table 14 shows the total benefits, net of costs, of a $100 tuition increase for each type of institution. It is clear that, even allowing for lost potential revenues and compensation to low-income students, a $100 tuition increase is a profitable move which is estimated to produce from $27.29 to $85.82 per student. Except in the case of the two-year public colleges, a $100 increase (if accompanied by adequate compensation for low-income students) is not expected to cause any original students to drop out. In addition, some marginal students would still attend.

A $100 tuition increase is posited as one possible institutional response to the enactment of a tax credit. In fact, the institutions could garner even greater increases in revenues if they raise tuition by the amount of the entire mean credit, though this would mean that no mar-

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[11] Students in the $3,000-$5,999 income group attending Type C (public two-year) institutions would originally receive a mean $23 tax credit for their mean $23 net tuition expenses. With tuition going to $123, their mean credit would rise to $123. This would cost the government an additional $1.2 million and the institutions nothing. Each community college student in the higher income groups would also receive $100 additional tax credit. Thus, a $100 tuition increase by the two-year public colleges would result in an additional $90.5 million cost to the federal government.

ginal students would attend and that considerably larger compensation payments would be required for low-income students. Nevertheless, as Tables 15-18 indicate, such a policy would result in high net benefits for the institutions without any loss of original students.

Table 15 shows the additional institutional revenues, by type of institution, which would be obtained by charging original students increased tuition equal to the amount of the mean tax credit. Table 16 indicates the tuition-and-fee revenues forgone because all marginal students would decide not to enroll. Compensation to low-income students is treated in Table 17. Each student in the $0 - $2,999 income category would have to be compensated for the entire tuition increase. Those in the $3,000 - $5,999 group, who receive a mean $180 tax credit, would be compensated for increased tuition above the amount of their credit.[12/] Table 18 shows the net benefits arising from this tuition increase. Except in the case of Type C (public two-year) institutions, a tuition increase in the amount of the average tax credit would provide institutions with greater net benefits than a $100 increase. For all institutional types, a tuition increase of that amount would yield the greatest net benefit possible without discouraging any original students from enrolling.

This analysis is intended not to predict how institutions will respond if a tuition tax credit is enacted but rather to describe the financial considerations that might influence institutional decisions.

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[12] In this case, students at two-year public colleges would face a tuition increase of $19.81 which would be more than covered by their mean tax credit of $23. Therefore no compensation to this group is predicted.

As far as the decision to raise tuition is concerned, the financial prognosis appears positive. Actual price increases and student enrollment responses would depend on political decisions and on the ability of institutions to avoid a "price war." Other outcomes--such as increased BEOG payments to low-income students and increased tax credits for community college enrollees--are also uncertain but, as the analysis suggests, they could occur.

Further Dynamic Considerations

A tuition tax credit could also produce some side-effects that are too uncertain to discuss in quantitative terms but are at the same time important enough to at least bring to the attention of policy-makers considering enactment of a credit. Two specific implications come to mind.

The first concerns the role of a tax credit in determining student need for financial aid. It stands to reason that a tax credit to families would be taken into consideration when family contribution schedules are drawn up by the "need analysis services." After his or her family received a tax credit, a student would have less need--and would receive less financial aid (both federal and institutionally generated)--than in the absence of a tax credit measure. The student who received less financial aid would then have higher net tuition expenses and, thus, could draw a higher tax credit. This would necessitate another determination of need. The process would continue until the student became eligible to collect the maximum allowable tax credit for the appropriate income group. At that point, tax credit money would to some extent have been substituded for federal and institutional financial aid money.

The present "uniform methodology" for determining family contri-

butions does not take into account a possible tax credit to families. If such a credit were enacted, some determination of how it would be treated in need analysis would have to be made.

A second dynamic side-effect would occur if increased funding for federal grant-in-aid programs were needed to compensate low-income students for tax-credit-induced tuition increases. The compensation payments projected in the previous section would come to about $30.6 million in the case of a $100 tuition increase and to about $73.5 million in the case of an increase equal to the average tax credit. Inevitably, some of the added burden on low-income students would be reflected in federal need analyses and would have to be taken care of through additional BEOG or other federal payments. No reliable estimation of this additional federal burden can be made until the magnitude of the tuition increases is known, and no BEOG money has been appropriated for this new federal responsibility. But increased federal financial aid through existing programs can be considered a probable hidden cost of a tax credit.

7. SUMMARY

Tuition tax credit proposals are often promoted for their simplicity. A tax credit is said to be easier for the federal government to administer and for students and their parents to understand than are existing federal grant and loan programs. Yet Senator Roth's S. 311, one of the simplest tax allowance proposals yet advanced, has complex implications, certainly much more complex than one would believe from the Congressional testimony and policy statements that have been presented in its favor. Difficult questions must still be resolved about income redistribution, institutional impact, and the dynamic implications of a tax credit. A review of some of the major issues may be helpful.

Budgetary Impact

S. 311 is estimated to cost the U.S. Treasury almost $1.3 billion in 1977. This figure would rise to over $2.4 billion in 1980. Though these figures are only estimates and the actual cost could be somewhat higher or lower, it is clear that a tax credit measure would be a major component of the federal effort in support of higher education.

The cost estimates in this study are close to those produced by Congressional staff and the Congressional Budget Office. What previous studies have not considered are the added costs which would result from tax-credit-induced changes in student and institutional behavior. Enrollment increases caused by the introduction of a tax credit could cost the federal government as much as $115 million in additional tax expenditures. Tuition increases at public two-year colleges could result in another $90 million revenue loss. While the exact amount of these additional expenditures cannot be accurately determined, policy-makers should realize

that the total cost of a tax credit may be somewhat higher than what they originally envisioned.

Benefit Distribution by Income Category

Many middle-income families have recently come to believe that they are paying more than they should be for education and other goods and services. Economists have had difficulty, however, documenting any "squeeze" on the middle class, at least for higher education. What may be occurring is that middle-income families are realizing that much of the education cost burden has been lifted from lower-income students and in this sense, the middle class is now relatively worse off.[1/] The tax credit proposed by Senator Roth would go a long way toward rectifying the perceived imbalance: Middle- and upper-income families would have a relative advantage in garnering tax credit expenditures. The poor, because of their low tax liabilities, would receive little or nothing. If colleges raise tuition in order to capture the credit and if no compensation is made available, low-income students would find themselves in a worse position (absolute as well as relative) than they are in the absence of a tax credit. Though higher tuition is not a foregone conclusion, policy-makers should consider how low-income students might be protected from tuition increases. Beyond that, serious thought should be devoted to the wisdom of providing massive aid to a group whose actual need for such aid is still less than certain.

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[1] Edward B. Fiske, "Pressure Rises for Aid to Middle-Income College Students," The New York Times, January 19, 1977. The ideas here were paraphrased from statements in this article by Michael McPherson.

Benefit Distribution by Type of Institution

It is difficult to decide which group of institutions will benefit the most from a tax credit measure. The community college sector does not stand to gain very much, at least from a static viewpoint; net tuition at these schools is simply too low for their students to get more than a small share of total tax credit expenditures. Students at other public institutions would tend to do better, with almost one-half of all tax-credit expenditures going to students in public four-year colleges and public universities. Students at private colleges would receive one-quarter of these funds, though the average credit received by these students would be somewhat higher than that received by their public college counterparts.

The ability of different types of institutions to attract new students also remains open to speculation. Public institutions would undoubtedly benefit from having their net tuitions "zeroed out" or reduced to very low levels. Private colleges might prosper because their students could get higher tax credits and because this would narrow, somewhat, the "tuition gap." In all, the available data do not permit a percise determination of which institutions will be the relative winners and which the losers as a result of a tax credit.

Dynamic Effects: Student Enrollment

Many recent studies have shown that students are at least somewhat sensitive to price factors in making their enrollment decisions. Because it would reduce the effective price of higher education, a tax credit should lead to increased enrollment in all sectors of higher education.

Total additional enrollment of 320,085 is projected, though there are reasons to believe that this figure is too high. In all, a tax credit might be considered a means for implementing the federal policy of promoting access to postsecondary education but, in terms of additional enrollment per dollar of federal tax expenditure, it is certainly an inefficient means of working toward that goal.

Other possible changes in student behavior as a result of the tax credit involve net shifts from part-time enrollment to full-time enrollment, from public two-year colleges to public four-year colleges and universities, and from public to private institutions. Policy-makers should consider whether it is desirable to enact legislation which would, as a side effect, produce such changes in the distribution of higher education clientele.

Dynamic Effects: Institutional Pricing Policy

Some higher education officials have denied that enactment of a tuition tax credit would be an incentive for colleges and universities to raise their prices. Nevertheless, such an enactment would give institutions an opportunity to generate major additional (and often sorely needed) revenues without placing new burdens on their students. Raising tuition would mean losing the revenues expected from students who would attend college only if a tax credit of sufficient size were available. Some compensation for low-income students, who could not receive tax credits, would also be necessary, either through existing federal grant programs or from institutional sources. Taking these factors into consideration and assuming that a price war does not break out among colleges, raising

tuition would appear, from the institutional perspective, to be a sound financial policy.

Many tax credit proponents might agree that colleges need additional revenues, but few have proposed that the federal government provide these revenues through a tax credit measure. Yet the possibility--and the desirability--of a tax credit's becoming a mechanism for generating aid to institutions should not be forgotten as the current policy debate continues.

TABLE 1

ESTIMATES OF TAX EXPENDITURES FOR S.311
(In Billions of Dollars)

Year	Senator Roth	C.B.O.	A.C.E.
1977	1.1	.918	1.282
1978	1.3	1.389	1.530
1979	1.7	1.852	1.971
1980	2.0	2.320	2.410

Sources: Senator William V. Roth, statement in Congressional Record, January 18, 1977, p. S.927; Congressional Budget Office, "Response to Questions from the Senate Budget Committee," March 17, 1977; Policy Analysis Service, American Council on Education, 1977.

TABLE 2

DISTRIBUTION OF POSTSECONDARY EDUCATION ENROLLMENT
BY FAMILY INCOME CATEGORY

Category Number	Range of Income	Percent of Total Enrollment
1	Less than $3,000	4.3
2	$ 3,000 - 5,999	12.4
3	$ 6,000 - 7,499	7.2
4	$ 7,500 - 9,999	13.6
5	$10,000 - 14,999	29.5
6	$15,000 - 24,999	23.0
7	$25,000 or over	10.1

Source: Policy Analysis Service, American Council on Education based on U.S. Bureau of the Census, "Current Population Survey," October 1972, special tabulations.

TABLE 3

TOTAL AND MEAN TAX CREDIT EXPENDITURES,
BY FAMILY INCOME CATEGORY

Income Category	Total Enrollment	Distribution of Tax Expenditures Dollars (In 1,000s)	Distribution of Tax Expenditures Percent	Mean Tax Credit Per Student
		1977		
1	305,699	-0-	-0-	-0-
2	875,081	$ 124,525	9.7	$142.30
3	507,019	97,519	7.6	192.34
4	963,136	188,471	14.7	195.69
5	2,088,696	402,732	31.4	192.82
6	1,629,426	323,400	25.2	198.48
7	713,028	145,691	11.4	204.33
Total	7,082,085	$1,282,338	100.0	$181.07
		1978		
1	310.781	-0-	-0-	-0-
2	890,244	$ 129,325	8.5	$145.26
3	515,683	118,618	7.8	230.02
4	979,289	228,420	14.9	233.25
5	2,123,130	488,223	31.9	229.95
6	1,655,119	390,284	25.5	235.80
7	723,018	175,475	11.5	242.70
Total	7,197,264	$1,530,345	100.0	$212.63
		1979		
1	315,882	-0-	-0-	-0-
2	905,459	$ 134,169	6.8	$148.18
3	524,367	156,596	7.9	298.64
4	995,497	300,156	15.2	301.51
5	2,157,666	640,801	32.5	296.99
6	1,680,872	509,931	25.9	303.37
7	733,022	229,671	11.7	313.32
Total	7,312,765	$1,971,324	100.1	$269.57
		1980		
1	321,043	-0-	-0-	-0-
2	920,833	$ 139,304	5.8	$151.2
3	533,149	180,583	7.5	338.7
4	1,011,874	374,055	15.5	369.6
5	2,192,533	797,845	33.1	363.8
6	1,706,840	632,863	26.3	370.7
7	743,092	285,154	11.8	383.7
Total	7,429,364	$2,409,804	100.0	$324.3

Note: Columns may not total 100 percent due to rounding.

Source: Policy Analysis Service, American Council on Education, 1977.

TABLE 4

TAX CREDIT EXPENDITURES GOING TO
LOWER-, MIDDLE-, AND UPPER-INCOME TAXPAYERS

	Lower ($0-9,999)	Middle ($10,000-24,999)	Upper (Over $25,000)
Percent of total enrollment--1977-80	37.5	52.5	10.0
Percent of total tax credit $--1977	32.0	56.6	11.4
Percent of total tax credit $--1980	28.8	59.4	11.8
Percent of total tax returns filed--1975	51.3	40.3	8.4
Percent of total income tax paid--1975	9.5	46.1	44.1

Sources: Policy Analysis Service, American Council on Education and U.S. Internal Revenue Service, "1975 Preliminary Statistics for Individual Income Tax Returns," Publication No. 198.

TABLE 5

DISTRIBUTION OF POSTSECONDARY EDUCATION ENROLLMENT, BY TYPE OF INSTITUTION

Category Letter	Type of Institution	Percent of Total Enrollment			
		1977	1978	1979	1980
a	Public university	18.5	18.4	18.4	18.3
b	Public four-year college	24.1	24.2	24.2	24.2
c	Public two-year college	13.4	13.5	13.6	13.8
d	Private university	4.7	4.7	4.6	4.6
e	Private four-year college	13.7	13.6	13.5	13.4
f	Private two-year college	1.0	0.9	0.9	0.8
g	Noncollegiate institution	24.6	24.7	24.8	24.9
	TOTAL	100.0	100.0	100.0	100.0

Source: Policy Analysis Service, American Council on Education from National Commission on the Financing of Postsecondary Education, "A Context for Policy Research in Financing Postsecondary Education," p. 47.

TABLE 6

TOTAL AND MEAN TAX CREDIT EXPENDITURES,
BY TYPE OF INSTITUTION

Type of Instutition	Total Enrollment	Distribution of Tax Expenditures Dollars (In 1,000s)	Distribution of Tax Expenditures Percent	Mean Tax Credit Per Student
		1977		
a	1,308,298	$ 264,798	20.6	$202.40
b	1,709,833	356,413	27.8	208.45
c	945,734	18,735	1.5	19.81
d	335,298	70,703	5.5	210.87
e	968,331	203,329	15.9	209.95
f	70,922	14,876	1.2	209.75
g	1,743,667	353,485	27.6	202.72
Total	7,082,083	$1,282,339	100.1	$181.07
		1978		
a	1,325,101	$ 293,516	19.2	$221.50
b	1,739,034	427,844	28.0	246.02
c	971,933	40,182	2.6	41.34
d	336,465	84,195	5.5	250.23
e	977,732	243,449	15.9	248.99
f	68,333	17,107	1.1	250.34
g	1,778,667	424,052	27.7	238.41
Total	7,197,265	$1,530,345	100.0	$212.63
		1979		
a	1,341,934	$ 323,909	16.4	$241.37
b	1,768,234	567,911	28.8	321.17
c	998,133	61,898	3.1	62.01
d	337,599	111,059	5.6	328.97
e	987,132	322,816	16.4	327.02
f	65,733	21,792	1.1	331.52
g	1,814,000	561,941	28.5	309.78
Total	7,312,765	$1,971,326	99.9	$269.57
		1980		
a	1,358,800	$ 353,941	14.7	$260.48
b	1,797,433	707,603	29.4	393.67
c	1,024,332	85,579	3.6	83.55
d	338,799	137,445	5.7	405.68
e	996,533	401,381	16.7	402.78
f	63,134	25,802	1.1	408.69
g	1,850,333	698,054	29.0	377.26
Total	7,429,364	$2,409,805	100.2	$324.26

Note: Columns may not total 100 percent due to rounding.

Source: Policy Analysis Service, American Council on Education, 1977.

TABLE 7

TOTAL AND MEAN TAX CREDIT EXPENDITURES RECEIVED BY PUBLIC AND PRIVATE COLLEGE STUDENTS

Control of Institution	Total Enrollment	Distribution of Tax Expenditures Dollars (in 1,000s)	Distribution of Tax Expenditures Percent	Mean Tax Credit Per Student
		1977		
Public	3,963,865	$ 639,445	49.9	$161.44
Private	1,374,551	288,908	22.6	210.18
		1978		
Public	4,036,068	$ 761,542	49.8	$188.68
Private	1,382,530	344,751	22.5	249.36
		1979		
Public	4,108,301	$ 953,718	48.3	$232.14
Private	1,390,464	455,667	23.1	327.71
		1980		
Public	4,180,565	$1,147,124	47.7	$274.39
Private	1,398,466	564,628	23.5	403.75

Note: "Public" institutions include those in categories a, b, and c (See Table 5). "Private" institutions include categories d, e, and f. Noncollegiate institutions (category g) are not included in this table.

Source: Policy Analysis Service, American Council on Education, 1977

TABLE 8

PROJECTED NEW ENROLLMENT AND REVENUES GENERATED BY THE INTRODUCTION OF A $250 TAX CREDIT

Type of Institution	Original Enrollment[a]	Mean Credit	New Enrollment	Tuition[b]	New Revenues
a	1,308,298	$202.40	66,200	$ 699	$ 46,273,800
b	1,709,833	208.45	89,104	544	48,472,576
c	945,734	19.81	4,684	315	1,475,460
d	335,298	210.87	17,676	2,865	50 641,740
e	968,331	209.98	50,833	2,333	1 ,593,389
f	70,922	209.75	3,719	1,584	5,890,896
g	1,743,667	202.72	88,369	1,558	137,678,902
Total	7,082,083		320,085		$409,026,763

Note: "New enrollment" generated by the introduction of a tax credit is estimated as 2.5 percent of original enrollment per $100 of tax credit. Therefore new enrollment equals [Original Enrollment] [Mean Credit/100] [2.5]. New revenues equal [New Enrollment] [Tuition].

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Projected full-time enrollment for calendar year 1977.

[b]Projected "sticker price" tuition for calendar year 1977.

TABLE 9

ADDITIONAL-TAX CREDIT EXPENDITURES GENERATED BY NEW ENROLLMENT

Type of Institution	Mean Credit	New Enrollment	New Tax Credit Expenditures
		1977	
a	$202.40	66,200	$13,398,880
b	208.45	89,104	18,573,729
c	19.81	4,684	92,790
d	210.87	17,676	3,727,338
e	209.98	50,833	10,673,913
f	209.75	3,719	780,060
g	202.72	88,369	17,914,164
			$65,160,873
		1980	
a	$260.48	66,200	$17,243,776
b	393.67	89,104	35,077,571
c	83.55	4,684	391,348
d	405.68	17,676	7,179,800
e	402.78	50,833	20,474,515
f	408.69	3,719	1,519,918
g	377.26	88,369	33,338,088
			$115.216,016

Note: Projections of additional tax expenditures are made on the basis of the formula: New tax credit expenditures equal [Mean Credit] [New Enrollment]. Mean Credit is taken from Table 6. New enrollment is taken from Table 8.

Source: Policy Analysis Service, American Council on Education, 1977.

TABLE 10

ANNUAL PERCENTAGE INCREASES IN FACULTY COMPENSATION, 1969-70 THROUGH 1975-76

	Percentage Increase in Faculty Compensation or Salaries				
	Sample of 100 Private Institutions[a]	Institutions Reporting to AAUP[b]	All Institutions: Compiled by the National Center for Education Statistics[c]	Percentage Increase in Consumer Price Index[d]	Percentage Increases in Average Weekly Earnings, Private Non-Agricultural Employment[d]
1968/69 - 1969/70	--	7.1	5.8	5.7	5.2
1969/70 - 1970/71	8	6.2	5.4	5.1	5.5
1970/71 - 1971/72	6	4.3	3.5	3.7	6.7
1971/72 - 1972/73	5	5.0	4.1	4.7	6.9
1972/73 - 1973/74	4	5.9	5.1	8.7	6.5
1973/74 - 1974/75	6	6.4	5.8	11.0	6.1
1974/75 - 1975/76	6	6.4	6.1	7.3	7.0
1975/76 - 1976/77	5	--	--	5.5*	6.0*

Source: W. John Minter and Howard R. Bowen, Private Higher Education: Third Annual Report (Washington: Association of American Colleges, 1977), p. 19.

*Estimated by Minter and Bowen, based on data for seven months of the year.

[a]Data from Minter and Bowen, Private Higher Education, 1977. Refers to total compensation.

[b]AAUP Bulletin, August 1975, p. 125. Refers to total compensation and to both public and private institutions.

[c]Chronicle of Higher Education, February 9, 1976, p. 5. Refers to salaries only and to both public and private institutions.

[d]Source: U. S. Department of Labor.

TABLE 11

INSTITUTIONAL REVENUES GAINED THROUGH A $100 TUITION INCREASE

Type of Institution	Original Enrollment[a]	Remaining Marginal Enrollment[b]	Additional Revenues[c]
a	1,308,298	33,492	$134,179,000
b	1,709,833	46,358	175,619,100
c	945,734	-18,960	92,677,400
d	335,298	9,294	34,459,200
e	968,331	36,624	99,495,500
f	70,922	1,946	7,286,800
g	1,743,667	44,777	178,844,400

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Projected full-time enrollment for calendar year 1977.

[b]"Remaining Marginal Enrollment" is an estimate of the number of students who would, first, be persuaded to enroll in postsecondary education by the presence of a $250 tax credit and, second, still enroll after the introduction of a $100 tuition increase. The base number of marginal students is taken from the "New Enrollment" column of Table 8. Remaining marginal enrollment is then calculated as [New Enrollment] minus [(Original Enrollment) (.025)].

[c]"Additional Revenues" equal [(Original Enrollment) plus (Remaining Marginal Enrollment)] [$100].

TABLE 12

INSTITUTIONAL REVENUES LOST THROUGH A $100 TUITION INCREASE

Type of Institution	Lost Marginal Students[a]	Tuition[b]	Lost Marginal Revenues[c]
a	32,707	$ 699	$22,862,193
b	42,746	544	23,253,824
c	23,643	315	7,447,545
d	8,382	2,865	24,014,430
e	24,208	2,333	56,477,264
f	1,773	1,584	2,808,432
g	43,592	1,558	67,916,336

Source: Policy Analysis Service, American Council on Education, 1977.

[a]"Lost Marginal Students" is an estimate of the number of students who would be persuaded to enroll in postsecondary education by the presence of a $250 tax credit but subsequently would not attend after the imposition of a $100 tuition increase. It is assumed to be equal to the number of marginal students generated by a $100 change in tuition. Thus, the formula used is [Lost Marginal Students] equal [Original Students] [.025].

[b]Projected "sticker price" tuition for calendar year 1977.

[c]"Lost Marginal Revenues equal [Lost Marginal Students] [Tuition].

TABLE 13

COMPENSATION TO LOW-INCOME FAMILIES FOR A $100 TUITION INCREASE

Type of Institution	Compensation to the $0-2,999 Income Group[a]		Compensation to the $3,000-6,000 Income Group[b]	
	Enrollment[c]	Total Compensation[d]	Enrollment[c]	Total Compensation[d]
a	44,063	$4,406,300	153,280	No compensation would be needed for families in this group[e]
b	64,974	6,497,400	217,149	
c	40,667	4,066,700	122,000	
d	12,932	1,293,200	29,037	
e	39,702	3,970,200	89,086	
f	3,972	397,200	2,979	
g	99,389	9,938,900	261,550	

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Mean tax payment for families in the $0-2,999 group equals $0.

[b]Mean tax payment for families in the $3,000-5,999 group equals $180.

[c]Projected full-time enrollment for calendar year 1977.

[d]Compensation to families in the $0-2,999 group is computed at $100 per student.

[e]Families in the $3,000-5,999 group would have available enough tax credit dollars to absorb a $100 tuition increase without compensation. However, families of students attending public two-year institutions (type c) would increase their mean tax credit received from $23 to $123, at an additional cost to the federal government of some $12.2 million.

TABLE 14

TOTAL INSTITUTIONAL BENEFITS AND COSTS OF RAISING TUITION $100

Type of Institution	Benefits[a]	Costs	Net Benefit	
			Total[b]	Per Student[c]
a	$134,179,000	$22,862,193[d] 4,406,300[e] $27,268,493	$106,910,507	$81.72
b	$175,619,100	$23,253,824[d] 6,497,400[e] $29,751,224	$145,867,876	$85.31
c	$ 92,677,400	$ 7,447,545[d] 4,066,700[e] $11,514,245	$ 81,163,155	$85.82
d	$ 34,459,200	$24,014,430[d] 1,293,200[e] $25,307,630	$ 9,151,570	$27.29
e	$ 99,495,500	$56,477,264[d] 3,970,200[e] $60,447,464	$ 39,048,036	$40.33
f	$ 7,286,800	$ 2,808,432[d] 397,200[e] $ 3,205,632	$ 4,081,168	$57.34
g	$178,844,400	$67,916,336[d] 9,938,900[e] $77,855,236	$100,989,164	$57.92

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Taken from Table 11, "Additional Revenues" column.

[b]Total net benefits equal benefits minus costs.

[c]Net benefit per student equal (total net benefit/original enrollment). Projected full-time enrollment for calendar year 1977 is used as an estimate of original enrollment.

[d]Taken from Table 12, "Lost Marginal Revenues" column.

[e]Compensation to the $0-3,000 income group (see Table 13).

TABLE 15

INSTITUTIONAL REVENUES GAINED THROUGH A TUITION INCREASE EQUAL TO THE MEAN TAX CREDIT, BY TYPE OF INSTITUTION

Type of Institution	Original Enrollment[a]	Mean Tax Credit[b]	Additional[c] Revenues
a	1,308,298	$202.40	$264,797,638
b	1,709,833	208.45	356,412,886
c	945,734	19.81	18,734,887
d	335,298	210.87	70,703,019
e	968,331	209.98	203,329,107
f	70,922	209.75	14,876,073
g	1,743,667	202.72	353,484,897

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Projected full-time enrollment for calendar year 1977.

[b]Taken from Table 6.

[c]"Additional Revenues" equal [Original Enrollment] [Mean Tax Credit].

TABLE 16

INSTITUTIONAL REVENUES LOST THROUGH A TUITION INCREASE EQUAL TO THE MEAN TAX CREDIT, BY TYPE OF INSTITUTION

Type of Institution	Total Marginal Enrollment[a]	Tuition[b]	Lost Marginal Revenues[c]
a	66,200	$ 699	$ 46,273,800
b	89,104	544	48,472,576
c	4,684	315	1,450,460
d	17,676	2,865	50,641,740
e	50,833	2,333	118,893,389
f	3,719	1,584	5,890,896
g	88,369	1,558	137,678,902

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Taken from Table 8, "New Enrollment" column.

[b]Projected "sticker price" tuition for calendar year 1977.

[c]"Lost Marginal Revenues" equal [Total Marginal Enrollment] [Tuition].

TABLE 17

COMPENSATION TO LOW-INCOME FAMILIES FOR A TUITION INCREASE EQUAL TO THE MEAN TAX CREDIT

Type of Institution	Compensation to the $0-2,999 Income Group[a]			Compensation to the $3,000-5,999 Income Group[b]		
	Enrollment[c]	Mean Tax Credit[d]	Total Compensation[e]	Enrollment[c]	Mean Tax Credit-$180[d]	Total Compensation[f]
a	44,063	$202.40	$ 8,918,351	153,280	$22.40	$3,433,472
b	64,974	208.45	13,543,830	217,149	28.45	6,177,889
c	40,667	19.81	805,613	122,000	g/	-0-
d	12,932	212.87	2,726,971	29,037	30.87	896,372
e	39,702	209.98	8,336,626	89,086	29.98	2,070,798
f	3,972	209.75	833,127	2,979	29.75	88,625
g	99,389	202.72	20,148,138	201,550	22.72	5,942,416

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Mean tax payment for families in the $0-2,999 group equals $0.

[b]Mean tax payment for families in the $3,000-5,999 group equals $180.

[c]Projected full-time enrollment for calendar year 1977.

[d]Taken from Table 6.

[e]Because families in the $0-2,999 group have no tax liabilities, their total compensation is equal to [Enrollment] [Mean Tax Credit].

[f]Because families in the $3,000-5,999 group have a mean tax liability of $180, their compensation is computed at [Enrollment] [Mean Tax Credit minus $180].

[g]Students at category "c" institutions would face a tuition increase of $19.81. This would be more than covered by their mean tax credit of $23. No compensation would be needed.

TABLE 18

TOTAL INSTITUTIONAL BENEFITS AND COSTS OF RAISING TUITION BY THE AMOUNT OF THE MEAN TAX CREDIT

Type of Institution	Benefits[a]	Costs	Net Benefit	
			Total[b]	Per Student[c]
a	$264,797,638	$ 46,273,800[d] 8,918,351[e] 2,433,472[f] $ 57,625,623	$207,172,015	$158.35
b	$356,412,886	$ 48,472,576[d] 13,543,830[e] 6,177,889[f] $ 68,194,295	$288,218,591	$168.57
c	$ 18,734,887	$ 1,450,460[d] 805,613[e] $ 2,256,073	$ 16,478,814	$ 17.42
d	$ 70,703,019	$ 50,641,740[d] 2,726,971[e] 896,372[f] $ 54,265,083	$ 16,437,936	$ 49.02
e	$203,329,107	$118,893,389[d] 8,336,626[e] 2,670,798[f] $129,900,813	$ 73,428,294	$ 75.83
f	$ 14,876,073	$ 5,890,896[d] 833,127[e] 88,625[f] $ 6,812,648	$ 8,063,425	$113.69
g	$353,484,897	$137,678,902[d] 20,148,138[e] 5,942,416[f] $163,769,456	$189,715,441	$108.80

Source: Policy Analysis Service, American Council on Education, 1977.

[a]Taken from Table 15, "Additional Revenues" Column.

[b]Total net benefits equal benefits minus costs.

[c]Net benefit per student equals [Total Net Benefit] divided by [Original Enrollment]. Projected full-time enrollment for calendar year 1977 is used as an estimate of original enrollment.

[d]Taken from Table 16, "Lost Marginal Revenues" column.

[e]Compensation to the $0-2,999 income group (see Table 17).

[f]Compensation to the $3,000-5,999 income group (see Table 17).

APPENDIX

TABLE A-1

GROSS AND NET TUITION AND FEE ESTIMATES,
BY TYPE OF INSTITUTION AND ACADEMIC YEAR

	1976-77	1977-78	1978-79	1979-80
Public University				
Gross	$ 690	$ 709	$ 728	$ 747
Net	228	254	279	305
Public Four-Year College				
Gross	$ 538	$ 550	$ 562	$ 474
Net	468	486	504	521
Public Two-Year College				
Gross	$ 308	$ 320	$ 331	$ 343
Net	11	38	62	86
Private University				
Gross	$2,834	$2,900	$2,967	$3,033
Net	2,339	2,408	2,478	2,547
Private Four-Year College				
Gross	$2,305	$2,363	$2,422	$2,481
Net	2,040	2,102	2,164	2,226
Private Two-Year College				
Gross	$1,569	$1,605	$1,641	$1,677
Net	1,036	1,063	1,089	1,115
Noncollegiate Institution				
Gross	$1,515	$1,645	$1,788	$1,942
Net	1,416	1,548	1,693	1,849

Note: "Net" figures computed for tuition and required fees net of mean BEOG, SEOG, and SSIG grants.

Sources: Collegiate: NCES, Projections of Education Statistics to 1984-5, Table 44 (pp. 104-105); Noncollegiate: Policy Analysis Service, American Council on Education from 1971-72 HEGIS data.

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